

REMARKS

Claim 1 has been amended to recite "simultaneously" before "dehydrating and reducing" in line 2 of the claim, based on the disclosure at, e.g., page 3, lines 22-23 in the present application. Claim 4 has been added based on the disclosure at, e.g., page 5, lines 8-11 in the present application.

Entry of the above amendments is respectfully requested.

Issue regarding PTO/SB/08 A & B Form

Preliminarily, Applicants note that the Examiner has attached to the Office Action an initialed copy of the PTO/SB/08 form filed with the application on January 21, 2004, but has not attached an initialed copy of the PTO/SB/08 form filed on June 9, 2004.

Accordingly, Applicants respectfully request that the Examiner consider the information disclosed on June 9, 2004, and return an initialed copy of the June 9, 2004 PTO/SB/08 form with the next communication from the PTO.

Anticipation Rejection over Makita

On page 2 of the Office Action, claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Makita (JP20022220361).

The Examiner's Position

The Examiner's position is that Makita discloses a process wherein 2-hydroxycyclopentadecanone is dehydrated in the presence of a silica-alumina catalyst to form

cyclopentadecenone, which is subsequently treated with hydrogen in the presence of a palladium/carbon catalyst in toluene to produce cyclopentadecanone, which anticipates the present claims.

Applicants' Response

In response to this rejection, Applicants submit that Makita relates to two-stage reactions, i.e., the production of an unsaturated ketone by a dehydration reaction of acyloin and the subsequent production of a ketone by hydrogenation.

On the other hand, the present invention is a process for producing a ketone from acyloin in one-stage.

That is, JP '361 is directed to a two-stage process in which an acyloin is first dehydrated to convert it to an α,β -unsaturated ketone which is then hydrogenated to convert it to the corresponding ketone (see the English language abstract of JP '361 and the disclosure at pages 1-2 in the present application).

In contrast, the present invention is directed to a one-stage process in which the dehydration and reduction reactions occur simultaneously because the acid catalyst and the reduction catalyst coexist and hydrogen is present (see claim 1 and the disclosure at page 3 in the present application).

Accordingly, Applicants submit that the two-stage process of JP '361 neither teaches nor suggests the one-stage process of the present invention.

While Applicants consider that the claims as originally presented distinguish over JP '361, Applicants have amended claim 1 to highlight the distinction over the cited art more clearly by reciting "simultaneously" before "dehydrating and reducing" in line 2 of that claim.

Thus, Applicants submit that the present invention is not anticipated by (or obvious over) Makita, and withdrawal of this rejection is respectfully requested.

Anticipation Rejection over Bost

At the bottom of page 2 of the Office Action, claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Bost (US 3,963,571).

The Examiner's Position

The Examiner's position is that Bost discloses a process wherein a C₁₈ 2-hydroxycycloalkanone (specifically, 2-hydroxycyclooctadecanone) is dehydrated to form cyclooctadecenone, which is subsequently reacted with hydrogen to form cyclooctadecanone, wherein the reaction is conducted in the presence of zinc and hydrochloric acid, which anticipates the present claims.

Applicants' Response

In response to this rejection, Applicants submit that Bost relates to a process for producing a ketone from acyloin in one stage in the presence of zinc and hydrochloric acid, as described at page 1, lines 23-26 and page 2, lines 3-11 of the present application. Applicants submit that this process is disadvantageous as described at page 2, lines 13-25 of the present application.

Thus, Applicants submit that the Bost process is different from the present invention, and in particular, that the reaction mechanism is different from that of the present invention.

Accordingly, Applicants submit that the present invention is not anticipated by (or obvious over) Bost, and withdrawal of this rejection is respectfully requested.

Obviousness Rejection over Bost and Nakajima et al

On page 3 of the Office Action, claim 2 is rejected under 35 U.S.C 103(a) as being unpatentable over Bost (US 3,963,571) and Nakajima et al (US 5,300,654) in combination.

The Examiner's Position

The Examiner's position is that while Bost does not teach a phosphoric acid catalyst or a solid catalyst, Nakajima et al. in a different process teaches that in addition to acids such as sulfuric acid and hydrochloric acid, acids such as phosphoric acid and oxalic acid can be used for dehydration. The Examiner says it would have been obvious to substitute another acid known to be useful as a dehydrating agent, such as phosphoric acid, for the hydrochloric acid used in the process taught by Bost motivated by the reasonable expectation of successfully dehydrating a given compound using any acid known to have equivalence as a dehydrating agent.

Applicants' Response

In response to this rejection, Applicants submit that Nakajima discloses a process for producing an unsaturated ketone from β -hydroxy ketone. Acyloin according to the present invention is α -hydroxy ketone, so Applicants submit that the molecular structure of the acyloin is different from that of β -hydroxy ketone.

In addition, Applicants submit that Bost is different from the present invention in its reaction mechanism, as noted above.

Accordingly, even if Bost could be combined with Nakajima, Applicants submit that the present invention is not taught or suggested at all.

Thus, Applicants submit that the present invention is not obvious over Bost and Nakajima et al, and withdrawal of this rejection is respectfully requested.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

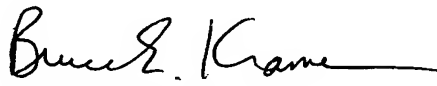
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